

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
10 June 2004 (10.06.2004)

PCT

(10) International Publication Number
WO 2004/047587 A3

(51) International Patent Classification⁷: **A45F 3/24**

(utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK (utility model), SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:
PCT/US2002/037450

(22) International Filing Date:
20 November 2002 (20.11.2002)

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(25) Filing Language: English

Published:

- with international search report
- with amended claims

(26) Publication Language: English

(88) Date of publication of the international search report:
10 September 2004

(71) Applicant (*for all designated States except US*): **TO-FASCO [US/US]**; 1736 Wright Avenue, La Verne, CA 91750 (US).

Date of publication of the amended claims: 16 December 2004

(72) Inventor; and

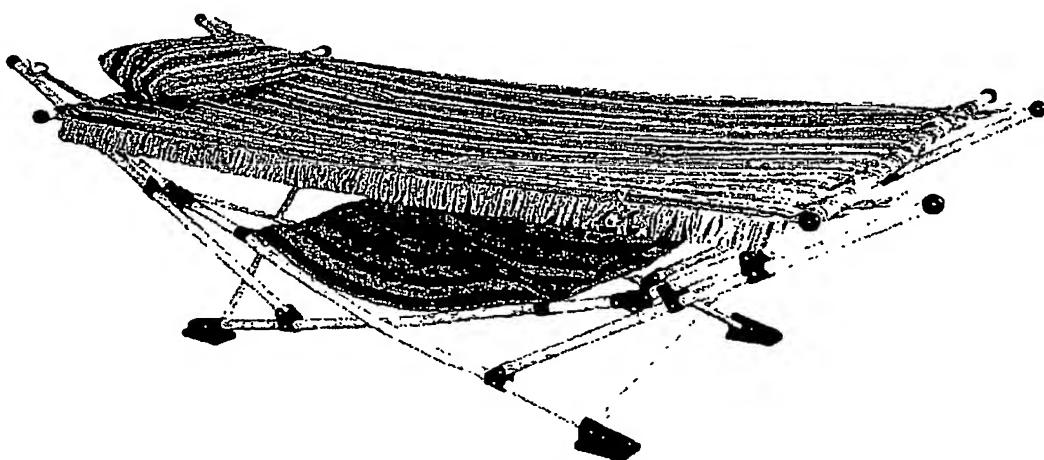
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(75) Inventor/Applicant (*for US only*): **ZHENG, Edward [CA/US]**; 1736 Wright Avenue, La Verne, CA 91750 (US).

(74) Agents: **RUTAN & TUCKER LLP et al.**; 611 Anton Blvd., Suite 1400, Costa Mesa, CA 92626 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE

(54) Title: COLLAPSIBLE HAMMOCK STAND



(57) Abstract: A hammock stand (100) has a plurality of legs (110, 112, 114, 116), support rods (120, 122, 124, 126), and a cross brace (130, 132) that couples at least one leg to at least one of the support rods such that the hammock stand collapses in a single movement.

WO 2004/047587 A3

AMENDED CLAIMS

[received by the International Bureau on 17 June 2004 (17.06.04);
original claims 1, 11 and 15 amended, remaining claims unchanged (3 pages)]

What is claimed is:

1. A hammock stand comprising four legs, four support rods to which a hammock is coupled, and a pair of cross braces, wherein the legs, the support rods, and the cross braces are coupled to each other such that the hammock stand collapses in a single movement in which two of the four legs approximate each other in a front-to-back and side-to-side motion as two of the support rods pivot towards each other.
2. The hammock stand of claim 1 wherein a first and a second of the four legs are rotatably coupled to each other.
3. The hammock stand of claim 2 wherein a first support rod is rotatably coupled to the first of the four legs and wherein a second of the support rods is rotatably coupled to the second of the four legs.
4. The hammock stand of claim 3 wherein the second of the four legs is coupled to the first of the support rods via a connector rod.
5. The hammock stand of claim 4 wherein the connector rod releasably engages with the first of the support rods and forms an obtuse angle with the second of the four legs when the hammock stand is in an open configuration.
6. The hammock stand of claim 4 wherein the pair of cross braces is rotatably coupled to each other, and wherein at least one of the cross braces is rotatably coupled to the first of the four legs, and rotatably and slidably coupled to a third of the support rods.
7. The hammock stand of claim 1 further comprising a body support that is coupled to at least two of the four support rods.
8. The hammock stand of claim 1 further comprising a flexible element that couples the first of the four legs with a third of the four legs and that facilitates collapsing of the hammock stand when the flexible element is pulled upwards relative to the ground and when the hammock stand is in an open configuration.
9. The hammock stand of claim 8 wherein the flexible element comprises a sheet of fabric.

10. The hammock stand of claim 9 wherein the sheet of fabric further comprises a handle.
11. A hammock stand comprising:
 - a first leg, a second leg, a third leg, and a fourth leg; and further comprising
 - a first support rod, a second support rod, a third support rod, and a fourth support rod, wherein the first, second, third, and fourth support rod are rotatably coupled to the first, second, third, and fourth leg, respectively;
 - a first pair of cross braces rotatably coupled to each other, wherein one of the first pair of cross braces is rotatably coupled to the first leg and third support rod and wherein the other of the first pair of cross braces is rotatably coupled to the third leg and first support rod;
 - a second pair of cross braces rotatably coupled to each other, wherein one of the second pair of cross braces is rotatably coupled to the second leg and fourth support rod and wherein the other of the second pair of cross braces is rotatably coupled to the fourth leg and second support rod; and
 - a first connector rod, a second connector rod, a third connector rod, and a fourth connector rod, wherein the first, second, third, and fourth connector rod rotatably couples the first leg and the second support rod, the second leg and the first support rod, the third leg and the fourth support rod, and the fourth leg and the third support rod, respectively.
12. The hammock stand of claim 11 further comprising a body support that is coupled to the first, second, third, and fourth support rod.
13. The hammock stand of claim 12 further comprising a sheet of fabric coupled to the first, second, third, and fourth leg, and that facilitates collapsing of the hammock stand when the sheet of fabric is pulled upwards relative to the ground and when the hammock stand is in an open configuration.
14. The hammock stand of claim 13 wherein the sheet of fabric further comprises a handle.

15. A collapsible hammock stand having a plurality of legs, a plurality of support rods to which a hammock is coupled, and at least one pair of cross braces that couple at least one leg to at least one of the support rods such that the hammock stand collapses in a simultaneous front-to-back and side-to-side motion.
16. The collapsible hammock stand of claim 15 wherein at least one leg is coupled to at least one support rod via a connector rod.
17. The collapsible hammock stand of claim 15 having four legs, four support rods, and two pairs of cross braces, wherein the first pair of cross braces couples at least one leg to at least one support rod, wherein the second pair of cross braces couples at least another one of the legs and another one of the support rods, and wherein at least two legs are rotatably coupled to each other.
18. The collapsible hammock stand of claim 17 wherein at least one of the support rods is rotatably coupled to at least one of the legs.
19. The collapsible hammock stand of claim 18 further comprising a body support that is coupled to at least two of the four support rods.
20. The collapsible hammock stand of claim 19 further comprising a sheet of fabric coupled to the first, second, third, and fourth leg, wherein the sheet facilitates collapsing of the hammock stand when the sheet of fabric is pulled upwards relative to the ground and when the hammock stand is in an open configuration.